CPCL Command Manual

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1. Programming introduction

This manual details the various commands in the CPCL language which allow the programmer to utilize the built in text, graphics, bar code printing and communications capabilities. The following notation conventions are used throughout this manual.

{}	Required item
[]	Optional item
()	Abbreviated command
<>	Literal item

A space character is used to delimit each field in a command line.

Getting Printer Information

The printer can print a report containing information about the application resident in the printer memory. This information can be printed by following these procedures.

1. Turn off the printer
2. While holding the FEED key down, turn the printer on.
3. When printing begins, release the FEED key.

The printing will contain information about printer model, ROM version, serial number, baud rate, USB, Bluetooth, font extra information which has been saved in the printer. In addition, certain amount of ASII hex codes will be printed to check the printing quality.

If you require to set for communication Diagnostic Mode, press FEED button again after printing information by following the steps above. The printer then indicates received information with hexadecimal.

LabelMaker

As LaberMaker has similar interface as general graphic edit tool, you can design readily without specific expertise for programming and print the data through LUKHAN Portable Printer. Moreover, you are able to save the label image into your PC with LBL file format. Saved label file can be reopening and edited.

Apart from the function of designing, you can save the file by communicating with printer, reopen saved file or see the state information of the printer.

2. Printer commands

A label file always begins with the "!" character followed by an "x" offset parameter, "x" and "y" axis resolutions, a label length and finally a quantity of labels to print. The line containing these parameters is referred to as the Command Start Line.

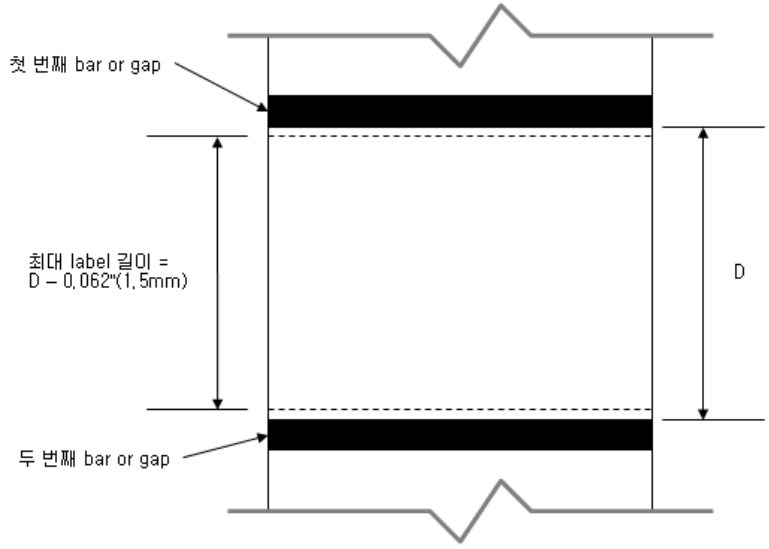
A label file always begins with the Command Start Line and ends with the "PRINT" command. The commands that build specific labels are placed between these two commands.

☞ NOTE: Every line in the command session must be terminated with both carriage-return and line –feed characters. All printer Commands must be in uppercase character ONLY.

A. PRINTER Commands

Form	*<!> {offset} <200> <200> {height} {qty}*
<!>	Session start
{offset}	The value of label horizontal offset
<200>	Horizontal resolution
<200>	Vertical resolution
{height}	Maximum value of Label Height

The Maximum height of the label is the numerical value deducted 1/16" (1.5mm) from the value which is measured from first bar (or gap) to the next bar (or gab). (In dots: 12donts on 203 dpi).



The quantity of label. The maximum value is 1024

```
Input (HELLO.LBL):

! 0 200 200 210 1
TEXT 4 0 30 40 Hello World
FORM
PRINT
```

Output:

Hello World

B. Print command

The print command terminates and prints the file. This must always be the last command (except when in Line Pint Mode). Upon execution of the Print command, the printer will exit from a control session. Be sure to terminate this and all commands with both carriage-return and line-feed characters.

Format

Format	*{command}*
Command & option	
{command}	PRINT

C. FORM Command

The Form command will execute a form feed after the label is printed and instructs the printer to feed to top of form after printing.

Format	*{command}*
Command & option	
{command}	FORM

```
Input: FORM.LBL

! 0 200 200 3 1
IN-CENTIMETERS
CENTER
TEXT 4 1 0 .5 Form Command
FORM
PRINT
```

D. JOURNAL Command

Be default, the printer will check for correct media alignment if it encounters the eye-sense mark during a print cycle. If necessary, the Journal command can be used to disable this automatic correction feature.

Format	*{command}*
Command & option	
{command}	JOURNAL

E. UNITS Command

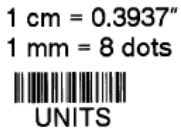
The Units commands are used to specify a measurement system for all subsequent command fields in a control session. Coordinates, widths, and heights for all control commands can be entered with precision for four decimal places. The printer measurement system will default to dots until a units command is issued.

Format	*{command}*	
Command & option		
{command}	IN-INCHES	Measurement in inches.
	IN-CENTIMETERS	Measurement in centimeters
	IN-MILLIMETER	Measurement in millimeters.
	IN-DOTS	Measurement in dots

Input 1 (UNITS1.LBL):

```
! 0.3937 200 200 1 1
IN-INCHES
T 4 0 0 0 1 cm = 0.3937"
IN-DOTS
T 4 0 0 48 1 mm = 8 dots
B 128 1 1 48 16 112 UNITS
T 4 0 48 160 UNITS
FORM
PRINT
```

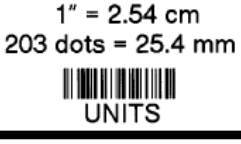
Output 1:



Input 2 (UNITS2.LBL):

```
! 0 200 200 2.54 1
IN-CENTIMETERS
T 4 0 1 0 1" = 2.54 cm
IN-MILLIMETERS
T 4 0 0 6 203 dots = 25.4 mm
B 128 0.125 1 6 12 14 UNITS
T 4 0 16 20 UNITS
FORM
PRINT
```

Output 2:



F. Using Comments

Comments can be added between the first line of a command start line and the print command.

A comment is placed in the file by starting a line with the ';' character in the first column. Any remaining text to the end of the line will be ignored. Comments are illegal between the CONCAT and ENDCONCAT commands.

Input (COMMENT.LBL):

```
! 0 200 200 25 1
IN-MILLIMETERS
JOURNAL
;  Center  justify  text
CENTER
; Print the words 'A COMMENT'
TEXT 5 1 0 5 A COMMENT
; Print the label and go to top of n
FORM
PRINT
```

Output:

3. TEXT

A. TEXT Commands

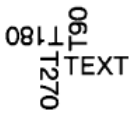
The TEXT command is used to place text on a label. This command and its variants control the specific font number and size used, the location of the text on the label.

Format	*{command} {font} {size} {x} {y} {data}*	
Command & option		
{command}	TEXT (or T)	Prints text horizontally
	VTEXT (or VT)	Prints text (vertically) rotated 90degrees counterclockwise
	TEXT90 (or T90)	Same as VTEXT above.
	TEXT180 (or T180)	Prints text (upside down) rotated 180 degrees counterclockwise
	TEXT270 (or T270)	Prints text (vertically) rotated 270 degrees counterclockwise
{font}		font의 Name/number
{size}		font의 size
{x}		Horizontal starting position
{y}		Vertical starting position
{data}		The text to be printed

Input (TEXT.LBL):

```
! 0 200 200 210 1
TEXT 4 0 200 100 TEXT
TEXT90 4 0 200 100 T90
TEXT180 4 0 200 100 T180
TEXT270 4 0 200 100 T270
FORM
PRINT
```

Output:



B. FONT-GROUP(FG) Command

The FG command gives a user the ability to group up to 10 pre-scaled font files into a single group. A user can later specify the font group in a TEXT command. If a font group is used in a text command, the printer will use the largest font specified in the font group that will produce the required text data and still remain within the available width of the label the text. When specified in the TEXT command, the {font} parameter is specified as FG, and the {size} parameter is specified as the {fg}. Note that a user can also specify an FG command within a CONCAT/ENCONCAT command.

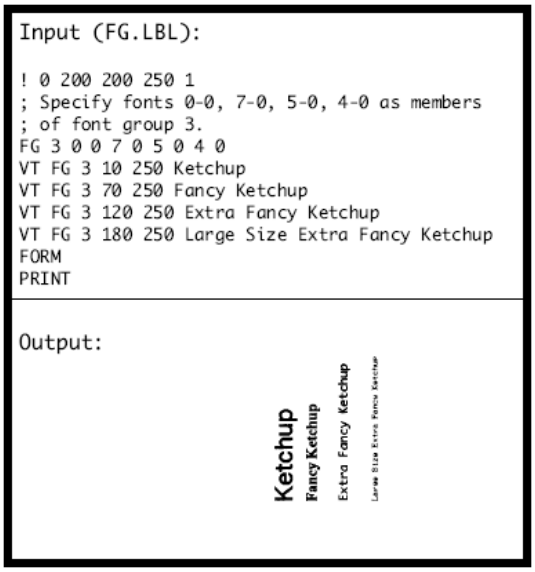
Format	*{command} {fg fn fs} {fn, fs} …*
Command & option	
{command}	FG
{fg}	Font group number. Up to 10font groups can be specified, Valid font groups rage from 0 to 9.
{fn}	Number of the font
{fs}	Size identifier for the font

☞ NOTE: Up to 10 font number/font size pairs can be assigned to a font group.

Input (FG.LBL):

```
! 0 200 200 250 1
; Specify fonts 0-0, 7-0, 5-0, 4-0 as members
; of font group 3.
FG 3 0 0 7 0 5 0 4 0
VT FG 3 10 250 Ketchup
VT FG 3 70 250 Fancy Ketchup
VT FG 3 120 250 Extra Fancy Ketchup
VT FG 3 180 250 Large Size Extra Fancy Ketchup
FORM
PRINT
```

Output:



C. TEXT CONCATENATION Command

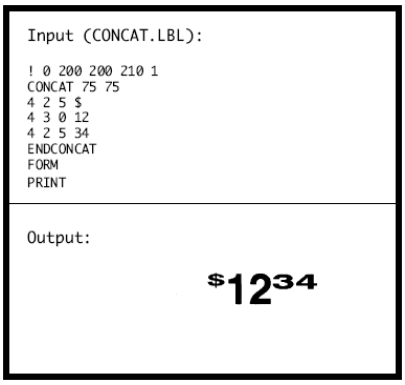
Text concatenation allows you to assign different character styles to strings, printing them with uniform spacing on the same text line. This command should be used in combination with CONCAT Command and ENDCONCAT Command.

Format

{command} {x} {y}
{font} {size} {offset} {data}
……
{font} {size} {offset} {data}
<ENDCONCAT>

Command & option

{command}	CONCAT	Horizontal concatenation
	VCONCAT	Vertical concatenation
{x}	Horizontal starting position.	
{y}	Vertical starting position	
{font}	font의 Name/number.	
{size}	Name/number of the font	
{offset}	Unit-value to offset text from the starting position. Used to align individual text strings or create superscript/subscript characters	
{data}	Text to be printed	
<ENDCONCAT>	Terminates concatenation	



D. MULTILINE(ML) Command

MULTILINE (ML) allow you to print multiple lines of text using the same number of font and line-height.

Format

{command} {height}
{text} {font} {size} {x} {y}
{data}
.....
{data}
<ENDMULTILINE>

Command & option

{command}	MULTILINE (or ML)	MULTILINE Prints multiple lines of text.
{height}	Unit-height for each line of text	
{text}	Text command (TEXT, VTEXT, etc.)	
{font}	Name/number of the font	
{size}	Size identifier for the font	
{x}	Horizontal starting position.	
{y}	Vertical starting position	
{data}	Text to be printed	
<ENDMULTILINE> *(or ENDML)*	Terminates NULTILINE	

```
Input (MULTIL.LBL):

! 0 200 200 210 1
ML 47
TEXT 4 0 10 20
1st line of text
2nd line of text
:
Nth line of text
ENDML
FORM
PRINT
```

Output:

1st line of text
2nd line of text
:
Nth line of text

E. COUNT Command

The COUNT command is used for printing multiple labels where a numeric text field or numeric data encoded in a bar code is to be incremented or decremented for each label. The TEXT/BACODE command string must contain this numeric data as the last characters of the string. The numeric data portion can be up to 20characters, and can be preceded by the '-' sign. Incrementing or decrementing the numeric data thru '0' is not allowed, Leading Zeros will be retained. Up to 3 COUNT commands can be used in a label file.

Format	*{command} {numeric value}*
Command & option	
{command}	COUNT
{numeric value}	Any integer value up to 20 characters. The value can be preceded by a ' – ' sign if decrementing of the TEXT/BARCODE value is desired, Leading zeros will be retained in the output.

F. SETMAG Command

The SETMAG command magnifies a resident font to the magnification factor specified.

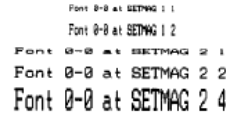
Format	*{command} {w} {h}*
Command & option	
{command}	SETMAG
{w}	Width magnification of the font (1~16)
{h}	Height magnification of the font (1~16)

☞ NOTE: The SETMAG command stays in effect after printing a label. To cancel any SETMAG values and allow the printer to use its default font sizes, use "SETMAG 0 0".

Input (SETMAG.LBL):

```
! 0 200 200 210 1
CENTER
SETMAG 1 1
TEXT 0 0 0 10 Font 0-0 at SETMAG 1 1
SETMAG 1 2
TEXT 0 0 0 40 Font 0-0 at SETMAG 1 2
SETMAG 2 1
TEXT 0 0 0 80 Font 0-0 at SETMAG 2 1
SETMAG 2 2
TEXT 0 0 0 110 Font 0-0 at SETMAG 2 2
SETMAG 2 4
TEXT 0 0 0 145 Font 0-0 at SETMAG 2 4
; Restore default font sizes
SETMAG 0 0
FORM
PRINT
```

Output:



4. Linear Bar Codes

A. BARCODE Command

The BARCODE command prints bar codes in both vertical and horizontal orientations at specified widths and heights.

Standard Bar Codes

ormat	*{command} {type} {width} {ratio} {height} {x} {y} {data}*	
Command & option		
{command}	BARCODE (or B)	Prints bar code horizontally
	VBARCODE (or VB)	Prints bar code vertically
{type}	UPC-A	UPCA, UPCA2, UPCA5
Symbology	UPC-E	UPCE, UPCE2, UPCE5
	EAN/JAN-13	EAN13, EAN132, EAN135
	EAN/JAN-8	EAN8, EAN82, EAN 85
	Code 39	39, 39C, F39, F39C
	Code 93/Ext. 93	93
	Interleaved 2 of 5	I2OF5
	Interleaved 2 of 5 with checksum	I2OF5C
	German Post Code	I2OF5G
	Code 128 (Auto)	128
	UCC EAN 128	UCCEAN128
	Codabar	CODABAR, CODABAR16
	MSI/Plessy	MSI, MSI10, MSI1010, MSI1110
	Postnet	POSTNET
	FIM	FIM
{width}	Unit-width of the narrow bar.	
{ratio}	Ratio of the wide bar to the narrow bar	
	20 = 2.0:1	26 = 2.6:1
	21 = 2.1:1	27 = 2.7:1
	22 = 2.2:1	28 = 2.8:1
	23 = 2.3:1	29 = 2.9:1
	24 = 2.4:1	30 = 3.0:1
{height}	Unit-height of the bar code	
{x}	Horizontal starting position	
{y}	Vertical starting position	
{data}	Bar code data	

```
Input (BARCODE.LBL):
! 0 200 200 210 1
BARCODE 128 1 1 50 150 10 HORIZ.
TEXT 7 0 210 60 HORIZ.
VBARCODE 128 1 1 50 10 200 VERT.
VTEXT 7 0 60 140 VERT.
FORM
PRINT
```

Output:

B. BARCODE-TEXT Command

The BARCODE-TEXT command is used to label bar codes with the same data used to create the bar code. The command eliminates the need to annotate the bar code using separate text commands. Use BARCODE-TEXT OFF (or BT OFF) to terminate.

Format *{command} {font number} {font size} {offset}*

Command & option

{command}	BARCODE-TEXT (or BT)
{font number}	The font number to use when annotating the bar code
{font size}	The font size to use when annotating the bar code
{offset}	Unit distance to offset text away from the barcode

```
Input (BARTEXT.LBL):

  ! 0 200 200 400 1
  JOURNAL
  CENTER
  ; Annotate bar codes using font 7 size 0
  ; and offset 5 dots from the bar code.
  BARCODE-TEXT 7 0 5
  BARCODE 128 1 1 50 0 20 123456789
  VBARCODE 128 1 1 50 40 400 112233445
  BARCODE-TEXT OFF
  FORM
  PRINT
```

Output:

5. Two-Dimensional Bar Codes

A. PDF417 (PORTABLE DATA FILE)

The following commands are used for the creation and formatting of two-dimensional bar codes.

Format	*{command} {type} {x} {y} [XD n] [YD n] [C n] [S n]* *{data}* *<ENDPDF>*	
Command & option		
{command}	BARCODE (or B)	Prints bar code horizontally
	VBARCODE (or VB)	Prints bar code vertically
{type}	PDF-417	
{x}	Horizontal starting position	
{y}	Vertical starting position	
[XD n]	Unit-width of the narrowest element. The range is 1 to 32 and the default is 2.	
[YD n]	Unit-height of the narrowest element. The range is 1 to 32 and the default is 6.	
[C n]	Number of columns to use. Data columns do not include start/stop characters and left/fight indicators. The range is 1 to 30 and the default is 3.	
[S n]	Security level indicates maximum amount of errors to be detected and/or corrected. The range is 0 to 8 and the default is 1.	
{data}	Bar code data.	
<ENDPDF>	Terminates PDF-417	

Input (PDF.LBL):

```
! 0 200 200 210 1
B PDF-417 10 20 XD 3 YD 12 C 3 S 2
PDF Data
ABCDE12345
ENDPDF
T 4 0 10 120 PDF Data
T 4 0 10 170 ABCDE12345
FORM
PRINT
```

Output:

PDF Data
ABCDE12345

B. MAXICODE

This revision supports only Mode 2 bar codes.

Format *{command} {type} {x} {y}*
{tag} {options}
...
{tag} {options}
<ENDMAXICODE>

Command & option

{command}	BARCODE or B	Prints bar code
{type}	MAXICODE	
{x}	Horizontal starting position	
{y}	Vertical starting position	
{tag}	Tags not supplied will be filled with default values. Use only the tags that you require. Tags can be in any order.	
<ENDMAXICODE>	Final tag in Maxicode bar code.	

Tags encoded in the high priority message of all Maxicodes:

Tag	Definition	Default Value
POST	Postal or ZIP Code	-empty-
CC	Country Code (from ISO 3166)	840 (USA)
SC	Service Class	1

Tags to control the type of bar code created:

Tag	Definition	Default Value
UPS5	Use UPS5 tags to create the low priority message. (On: 1, Off: 0)	0
FILLC	Low priority message fill character (Messages shorter than 84 characters will be padded with this character.)	!

Tags used when UPS5 is turned off:

Tag	Definition	Default Value
MSG	Low priority message field (maximum of 84 characters, overwritten by UPS5 tags)	-empty-

Tags used when UPS5 is turned on:

Tag	Definition	Default Value
LPMS	Low priority message header	[)>[RS]

HEAD	Transportation data format header	01[GS]98
TN	Tracking Number	[GS]
SCAC	Standard Carrier Alpha Code	UPSN
SHIPPER	UPS Shipper Number	[GS]
PICKDAY	Julian day of pickup	[GS]
SHIPID	Shipment ID Number	[GS]
NX	Package N of X (n/x)	[GS]
WEIGH	Package weight	[GS]
VAL	Address validation (Y or N)	[GS]
STADDR	Ship to street address	[GS]
CITY	Ship to city	[GS]
ST	Ship to state	[GS]
EXTRA	Extra user defined fields	- empty -
EOT	End of transmission character	0x004h
GS	Field separator character [GS]	0x01Dh
RS	Format type separator [RS]	0x01Eh

Basic example with minimal required fields to print a bar code:

```
! 0 200 200 600 1
JOURNAL
B MAXICODE 20 20
CC 12345
MSG This is a MAXICODE low pri-
ority message.
SC 12345
POST 02886
ENDMAXICODE
PRINT
```

Output:

6. Graphics

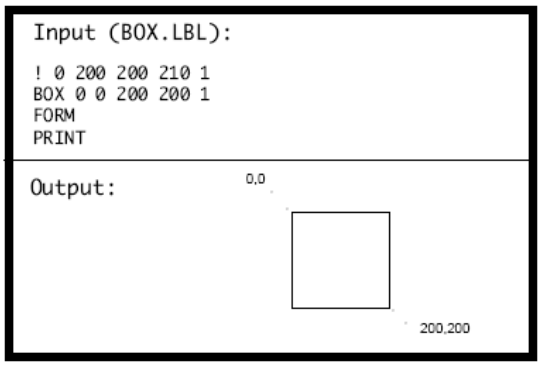
A. BOX Command

The BOX command provides the user with the ability to produce rectangular shapes of specified line thickness.

Format *{command} {x0} {y0} {x1} {y1} {width}*

Command & option

{command}	BOX
{x0}	X-coordinate of the top left corner
{y0}	Y-coordinate of the top left corner
{x1}	X-coordinate of the bottom right corner
{y1}	Y-coordinate of the bottom right corner
{width}	Unit-width (or thickness) of the lines forming the box.



B. LINE Commands

Lines of any length, thickness and angular orientation can be drawn using the LINE command.

Format *{command} {x0} {y0} {x1} {y1} {width}*

Command & option

{command}	LINE (or L)
{x0}	X- coordinate of the top-left corner
{y0}	Y- coordinate of the top-left corner
{x1}	X-coordinate of :-top right corner for horizontal. - bottom left corner for vertical
{y1}	Y-coordinate of :-top right corner for horizontal - bottom left corner for vertica
{width}	Unit-width(or thickness) of the line

C. INVERSE-LINE Commands

The INVERSE-LINE Command has the same syntax as the LINE command. Previously created objects that lie within the area defined by the INVERSE-LINE command will have their black areas re-drawn white, and white areas re-drawn black.

Input 1 (INVERSE1.LBL):

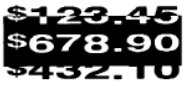
```
! 0 200 200 210 1
CENTER
TEXT 4 0 0 45 SAVE
TEXT 4 0 0 95 MORE
INVERSE-LINE 0 45 145 45 45
INVERSE-LINE 0 95 145 95 45
FORM
PRINT
```

Output 1:

Input 2 (INVERSE2.LBL):

```
! 0 200 200 210 1
T 4 2 30 20 $123.45
T 4 2 30 70 $678.90
IL 25 40 350 40 90
T 4 2 30 120 $432.10
FORM
PRINT
```

Output 2:



D. PATTERN Command

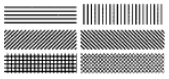
The PATTERN command is used with the LINE and SCALE-TEXT commands to change the patterns used to fill these shapes. In the diagonal line by using Line command, Pattern Command can not be used, and the default is 100 in solid black.

Format	*{command} {pattern number}*	
Command & option		
{command}	PATTERN	
{pattern number}	100	Filled (solid black/default pattern).
	101	Horizontal lines.
	102	Vertical lines.
	103	Right rising diagonal lines.
	104	Left rising diagonal lines.
	105	Square pattern.
	106	Cross hatch pattern.

Input (PATTERN.LBL):

```
! 0 200 200 700 1
; Draw horizontal and vertical patterns
PATTERN 101
LINE 10 10 160 10 42
PATTERN 102
LINE 170 10 350 10 42
; Draw left and right diagonal patterns
PATTERN 103
LINE 10 65 160 65 40
PATTERN 104
LINE 170 65 350 65 40
; Draw square and cross hatch patterns
PATTERN 105
LINE 10 115 160 115 40
PATTERN 106
LINE 170 115 350 115 40
; Draw a scalable text character with cross
; hatch pattern
FORM
PRINT
```

Output:



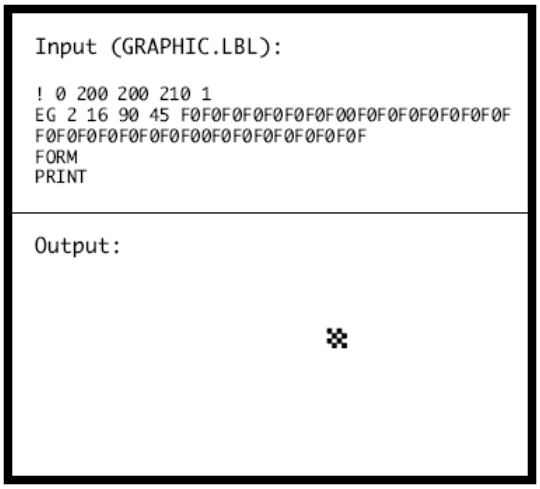
E. GRAPHICS Commands

Bit- mapped graphics can be printed by using graphics commands. ASCii HEX is used for expanded graphics data. Data size can be reduced to one-half by utilizing the COMPRESSED GRAPHICS commands with the equivalent binary character(s) of the hex data.

Format *{command} {width} {height} {x} {y} {data}*

Command & option

{command}	EXPANDED-GRAPHICS	Prints expanded (or EG) graphics horizontally.
	VEXPANDED-GRAPHICS	Prints expanded (or VEG) graphics vertically.
	COMPRESSED-GRAPHICS	Prints compressed (or CG) graphics horizontally.
	VCOMPRESSED-GRAPHICS	Prints compressed (or VCG) graphics vertically.
{width}	Byte-width of image	
{height}	Dot-height of image	
{x}	Horizontal starting position	
{y}	Vertical starting position	
{data}	Graphics data	



F. PCX Commands

The PCX command gives a user the ability to send ".PCX" graphics formatted images to the printer.

The .PCX image MUST be encoded as a black and white image.

Format	*{command} {x} {y} {data}*
Command & option	
{command}	PCX
{x}	X-coordinate of the top-left corner
{y}	Y-coordinate of the top-left corner
{data}	PCX image data.

```
Input 2 (IMAGE.LBL):

! 0 200 200 500 1
PCX 0 30 !<IMAGE.PCX
FORM
PRINT
```

Output:

7. Advanced Commands

A. CONTRAST Command

The contrast command is used to specify the print darkness for the entire label. The lightest printout is at contrast level 0. The darkest contrast level is 3. The printer defaults to contrast level 0 on power up. Contrast level must be specified for each label file.

Format	*{command} {level}*
Command & option	
{command}	CONTRAST
{level}	Contrast level.
	0 = Default
	1 = Medium
	2 = Dark
	3 = Very Dark

B. TONE Command

The TONE Command can be used instead of the CONTRAST Command to specify the print darkness for all labels. The lightest printout is at tone level-99. The darkest tone level is 200. The printer defaults to tone level 0 on power up. Tone level settings remain in effect for all printing tasks until changed. The TONE and CONTRAST commands cannot be used in combination with one another.

Format	*{command} {level}*
Command & option	
{command}	TONE
{level}	select a value from -99→200.
	Contrast to Tone level equivalents.
	Contrast 0 = Tone 0
	Contrast 1 = Tone 100
	Contrast 2 = Tone 200
	Contrast 3 = No equivalent

C. JUSTIFICATION Commands

Alignment of fields can be controlled by using the justification commands. By default, the printer will left justify all subsequent fields until another justification command is specified.

Format	*{command} [end]*	
Command & option		
{command}	CENTER	Center justifies all subsequent fields.
	LEFT	Left justifies all subsequent fields.
	RIGHT	Right justifies all subsequent fields.
[end]	End point of justification. If no parameter is entered, justification commands use the print head's width for horizontal printing or zero (top of form) for vertical printing.	

```
Input (JUSTIFY.LBL):

! 0 200 200 210 1
CENTER 383
TEXT 4 0 0 75 C
LEFT
TEXT 4 0 0 75 L
RIGHT 383
TEXT 4 0 0 75 R
FORM
PRINT
```

Output: L C R

D. PAGE-WIDTH Command

The command specifies the page width

Format *{command} {width}*

Command & option

{command} PAGE-WIDTH (or PW)

{width} Unit –width of the page

```
Input 1 (PW1.LBL):

! UTILITIES
SETLP 7 0 15
PW 300
PRINT

This text is printed with label memory width
set to 300 dots.
```

Output 1:

This text is printed with
label memory width set t
o 300 dots.

```
Input 2 (PW2.LBL):

! UTILITIES
SETLP 7 0 15
PW 200
PRINT

This text is printed with label memory width
set to 200 dots.
```

Output 2:

This text is prin
ted with label me
mory width set to
200 dots.

E. PACE Command

When PACE is activated, the user must depress the printer's 'FEED' key to print additional labels until the bath quantity is exhausted.

Format *{command}*

Command & option

{command} PACE

```
Input (PACE.LBL):

! 0 200 200 210 3
; Tell printer to print a label
; after each 'FEED' key press
; until all 3 labels are printed
PACE
; Printer holds journal stock
JOURNAL
; Center the text
CENTER
TEXT 4 1 0 10 Print 3 labels
TEXT 4 1 0 90 Using PACE
PRINT
```

Output:

F. NO-PACE Command

This command cancels the PACE and AUTO-PACE mode

G. WAIT Command

This command is used to introduce a delay after a label is printed.

Format *{command} {delay-time}*

Command & option

{command} WAIT

{delay-time} Delay time- Delay time in 1/8 seconds

In the example below, the printer will pause 10 seconds after printing each label.

```
INPUT (WAIT.LBL):

! 0 200 200 150 5
WAIT 80
TEXT 5 0 0 20 DELAY 10 SECONDS
FORM
PRINT
```

H. SPEED Command

This SPEED command selects a speed level within a range of 0 to 5, with 0the slowest speed.

Format *{command} {speed level}*

Command & option

{command} SPEED

{speed level} A number between 0 and 5, 0 being the slowest speed.

```
Input (SPEED.LBL):

! 0 200 200 150 1
SPEED 4
TEXT 5 0 0 20 PRINTS AT SPEED 4
FORM
PRINT
```

I. SETSP Command

The SETSP command is used to change spacing between text characters.

Format *{command} {spacing}*

Command & option

{command} SETSP

{spacing} Unit measurement between characters. The default for spacing is zero.

☞ NOTE: That this command is affected by the UNIT command setting.

```
Input (SETSP.LBL):

! 0 200 200 210 1
T 4 0 0 10 Normal Spacing
SETSP 5
T 4 0 0 50 Spread Spacing
SETSP 0
T 4 0 0 90 Normal Spacing
FORM
```

Output:

Normal Spacing
Spread Spacing
Normal Spacing

J. ON-OUT-OF-PAPER Command

ON-OUT-OF-PAPER can be issued to instruct the printer as to the course of action to action to take when it encounters an error while printing the label. There are two instructions; PURGE and WAIT

Format *{command} {action} {number of retries}*

Command & option

{command} ON-OUT-OF-PAPER

{action} PURGE: Discard the label if printer error is encountered after the specified number of attempts. WAIT: Do not discard the label if printer error is encountered. In this mode the printer will wait for the error to be corrected before making eh nest print attempt.

The default printer configuration is ON-OUT-OF-PAPER PURGE 2

K. ON-FEED Command

Your printer can be configured to ignore, form-feed, or reprint the last label when the feed key is pressed or when it receives a form-feed character.

Format *{command} {action}*

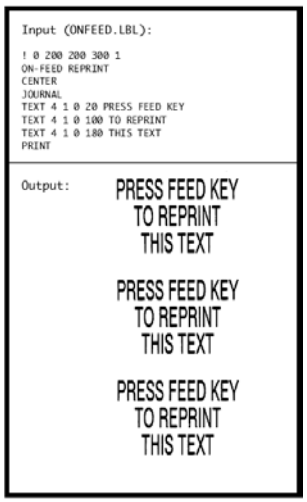
Command & option

{command} ON-FEED

{action} IGNORE: Do not take any action when the feed key is pressed or when the form-feed character is received .

FEED: Feed to top-of –form when the feed key is pressed or when the form-feed character is received.

REPRINT: Reprint the last label when the feed key is pressed or when the form-feed character is received.



L. BACKFEED

Format *{command}*

Command

{ Command } BACKFEED

Normal print	BACKFEED Command

```
! 0 200 200 400 1
LABEL
BACKFEED
T 4 0 0 0 BOX6
FORM
PRINT
```

M. PREFEED Command

The PREFEED command instructs the printer to advance the media a specified amount prior to printing.

Format *{command} {length}*

Command & option

{command} PREFEED

{length} Unit length the printer advances media prior to printing.

```
Input (PREFEED.LBL):

! 0 200 200 210 1
PREEFEED 40
TEXT 7 0 0 20 PREFEED EXAMPLE
FORM
PRINT
```

N. POSTFEED Command

The POSTFEED command instructs the printer to advance the media a specified amount after printing.

Format *{command} {length}*

Command & option

{command} POSTFEED

{length} Unit length the printer advances media after printing.

```
Input (POSTFEED.LBL):

! 0 200 200 210 1
TEXT 7 0 0 20 POSTFEED EXAMPLE
FORM
POSTFEED 40
PRINT
```

O. COUNTRY/CODE PAGE Command

The COUNTRY control command substitutes the appropriate character set for the specified country,

Format *{command} {name}*

Command & option

{command} COUNTRY

{name} USA

GERMANY

FRANCE

SWEDEN

SPAIN

NORWAY

CHINA (double byte encoding)

ITALY

CP850

UK

BIG5 (Traditional Chinese; double byte encoding)

JAPAN-S (Simplified Japanese fonts; double byte encoding)

```
Input (COUNTRY.LBL):

! 0 200 200 80 1
IN-MILLIMETERS
JOURNAL
CENTER
; Set the country as USA
COUNTRY USA
; Now Print Text From ISO sub-
stitution Table
TEXT 4 0 0 8 COUNTRY IS USA
TEXT 4 0 0 15 #$@[\]^`{|}~
; Set country for France and
print the same text
COUNTRY FRANCE
TEXT 4 0 0 28 COUNTRY IS FRANCE
TEXT 4 0 0 35 #$@[\]^`{|}~
PRINT
```

Output:

COUNTRY IS USA
#$@[\]^`{|}~

COUNTRY IS FRANCE
£$à°ç§^µéùè¨

P. USING FORMAT FILES

When you used the same form repeatedly, you can print the label only sending variable date to the printer by using a pre-loaded format.

In order to save a specified form, use "! DE" and to recall the saved format, use "! UF".

```
Input (FORMATF.LBL):

! DF SHELF.FMT
! 0 200 200 210 1
CENTER
TEXT 4 3 0 15 \\
TEXT 4 0 0 95 \\
BARCODE UPCA 1 1 40 0 145 \\
TEXT 7 0 0 185 \\
FORM
PRINT
```

```
Input (FORMATD.LBL):

! UF SHELF.FMT
$22.99
SWEATSHIRT
40123456784
40123456784
```

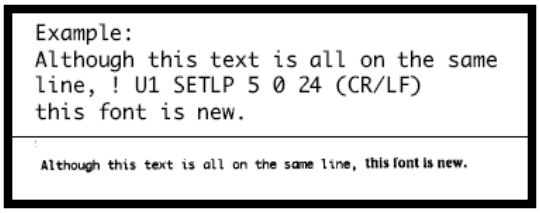
Q. BEEP Command

This command instructs the printer to sound the beeper for a given time length.

Format	*{command} {beep length}*
Command & option	
{command}	BEEP
{beep length}	Duration of beep, specified in 0.125ms.

8. Line Print Mode

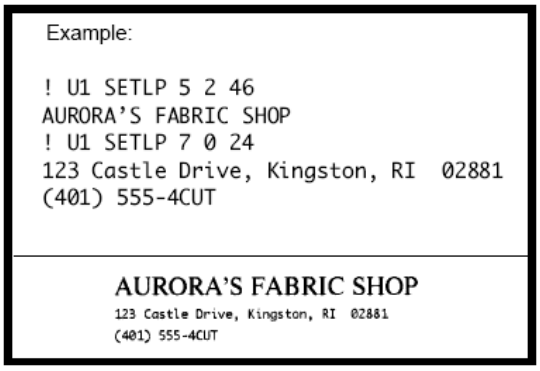
The "! UTILITIES" command, or "! U" for short, must be ended by the terminator "PRINT" followed by a CR/LF to end the utility session. Also, the "! U1" command can be placed anywhere in a text line o execute the command.


Example:
Although this text is all on the same
line, ! U1 SETLP 5 0 24 (CR/LF)
this font is new.
Although this text is all on the same line, this font is new.

A. SETLP Command

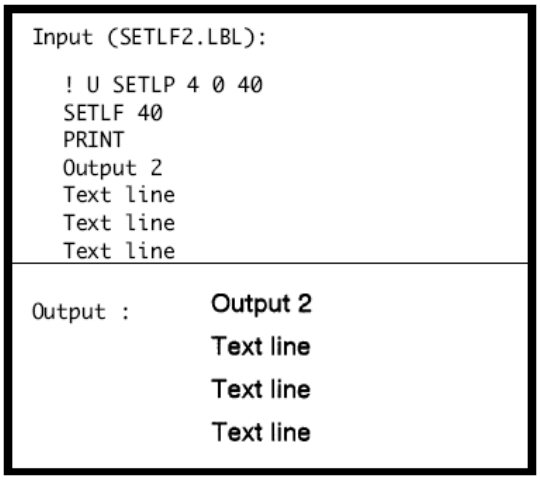
This command will be used to select the font, size and lint height

Format	*! U1 SETLP {font name or number} {size} {unit height}*
{font name or number}	Font number
{size}	Font size
{unit height}	Real font size to use



B. SETLF Command

This command is to specify the distance between lines.



C. Moving With X and Y Coordinates

Even though the printer is in a line print mode, it can still move down and across the paper using X and Y values.

Format *! U1 X {unit value}*
! U1 Y {unit value}
! U1 XY {x unit value} {y unit value}
! U1 RX {unit x value to move relative to present position}
! U1 RY {unit y value to move relative to present position}
! U1 RXY{unit x value to move relative to present position} {unit x value to move relative to present position}

{unit value}	Unit value
{x unit value}	X Unit value
{y unit value}	Y Unit value
{unit x value to move relative to present position}	Unit X value to move relative to present position
{unit y value to move relative to present position}	Unit Y value to move relative to present position

D. LMARGIN Command

The LMARGIN command sets the left margin in line print mode.

Format *! U1* LMARGIN *{dots to offset from left}*

{dots to offset from left} The value of Left margin

E. SETBOLD Command

The SETBOLE command will make text bolder and slightly wider. The value is an offset number from 0 to 5. Be sure to issue a "! U1 SETBOLE 0" command to turn the bolding off when done.

Format *! U1* SETBOLD *{value}*

{value} Value Range from 0 to 5

Example:

```
! U1 SETBOLD 2
This text is in bold ! U1 SETBOLD 0
but this text is normal.
```

This text is in bold but this text is normal.

F. SETSP Command

The SETSP command is used to change spacing between text characters.

Format *! U1* SETSP *{unit to separate characters}*

{unit to separate characters} The space between each characters

```
Example:
  Normal Text ! U1 SETSP 5
  SPREAD OUT TEXT
```

Normal Text S P R E A D O U T T E X T

G. PAGE-WIDTH Command

This command let you control the width.

Format	*! U1* PW *{unit width}*
{unit width}	Printing width for unit

H. PAGE-HEIGHT Command

This command let you control the height.

Format	*! U1* PH *{unit height}*
{unit height}	Print height

I. Special ASCII Characters

1. Form Feed

ASCII Character will advance the paper to either the next index mark, or the length specified by the **PAGE-HIGHT, SETFF OR SET-TOF** commands.

J. SETFF Command

The SETFF command is used to align top of media to printhead. Once this command is executed, the alignment will occur when:

- Feed key is pressed
- Form-feed character is issued
- FORM command is issued

Format	*<!> <UTILITIES>* *{command} {max-feed} {skip-length}* *<PRINT>*
Command & option	
{command}	SETFF
{max-feed}	Maximum unit-length the printer advances searching for the next eye-sense mark to align top of from. Valid values are 0-20,000
{skip-length}	Unit-length printer advances past top of from. Valid values are 5-50.

```
Input (SETFF.LBL):

! UTILITIES
IN-MILLIMETERS
SETFF 25 2.5
PRINT
```

K. SET-TOF Command

This command is used to program the distance between the top-of-form and the end of the next or previous eye-sense mark or gap.

Format	*! U1 {command} {d}*
Command & option	
{command}	SET-TOF
{d}	The distance between the top of form and the end of the next or previous eye-sense mark or gap.

L. SETLP-TIMEOUT

If the printer does not receive any characters after a set time, it will begin to print. This delay can be set with the SETLP-TIMEOUT command. The range of the time out is 0 to 255.

Format	*! U1 {command} {time in 1/8 second units}*
Command & option	
{command}	SETLP-TIMEOUT
{time in 1/8 second units}	Multiply the seconds to wait by 8 to get the correct time for the command (125ms)

9. Advanced Utilities

A. VERSION Utility

This command reports the firmware version as a four character null-terminated ASCII string.

Format *<!> <UTILITIES>*
{command}
<PRINT>

Command & option

{command} VERSION

```
Input (VERSION.LBL):

! UTILITIES
VERSION
PRINT
```

B. CHECKSUM Utility

This command reports the application checksum as a four character null-terminated ASCII string.

```
Input (CHECKSUM.LBL):

! UTILITIES
CHECKSUM
PRINT
```

C. DEL Utility

The DEL command deletes the specified file.

Format *<!> <UTILITIES>*
{command} {name.ext}
<PRINT>

Command & option

{command} DEL

{name.ext} Name of file to be deleted

D. DIR Utility

The DIR command sends the file directory to a host.

Format *<!> <UTILITIES>*
{command}
<PRINT>

Command & option

{command} DIR

E. DEFINE-FILE(DF) Utility

The DF command defiles a file name for a file to be loaded into the printer. If a file with the same name already exists in the printer. it will be overwritten with the new file.

Format	*<!> {command} {filename.ext}*
	{data}
	{terminator}
Command & option	
{command}	DF
{filename.ext}	
{data}	
{terminator}	PRINT: If the PRINT terminator is used, it is also written to the file.
	END: If the END terminator is used, it is not written to the file.

F. TYPE Utility

The TYPE command allows you to read a text file by sending it from the printer to host

Format	*<!> <UTILITIES>*
	{command} {name.ext}
	<PRINT>
Command & option	
{command}	TYPE
{name.ext}	

G. BAUD Utility

The BAUD command enables you to set the printer serial port baud rate.

Format	*<!> <UTILITIES>*
	{command} {baud}
	<PRINT>
Command & option	
{command}	BAUD
{baud}	1200
	4800
	9600
	19200
	38400
	57600
	115200

H. TIMEOUT Utility

If no data is received after the specified timeout, the printer will turn itself off to save energy and preserve battery life. You can disable the timeout feature by setting the timeout value to 0.

Format	*<!> <UTILITIES>*
	{command} {time}
	<PRINT>
Command & option	
{command}	TIMEOUT
{time}	Time in 1/8 seconds of inactivity before printer will turn itself off.

I. ON-LOW-BATTERY Command

This command can be issued to instruct the printer as to what action to take when the battery voltage fallos below the level set by the 'low battery shut-down' setting.

Format	*{command} {options}*
Command & option	
{command}	OLB
{options}	ALERT: The printer will transmit any message included between quote marks out the serial port.
	ALARM: Sounds the printer's beeper in a set time.

J. LT Command

This command specifies the command line terminator character(s). The default terminator characters are CR/LF or LF

Format	*{command} {mode}*
Command & option	
{command}	*LT*
{mode}	CR: Carriage-return (0x0D) character is the line terminator.
	LF : Line-feed (0x0A) character is the line terminator.
	CR-LF: Carriage-return/line-feed (0x0D 0x0A) characters are the line terminator.
	CR-X-LF: Line terminator is a carriage-return (0x0D) followed by any number of characters followed by the line-feed (0x0A) character.
	Characters found between the carriage-return and line-feed characters are discarded.

K. SET-TIME Utility

This command sets the time in the real time clock module.

Format *<!> <UTILITIES>*
{command} {time-stamp}
<PRINT>

Command & option

{command} SET-TIME

{time-stamp} hh:mm:ss
hh = hours (00 – 23)
mm = minutes (00 – 59)
ss = seconds (00 – 59)

L. GET-TIME Utility

This command reports the current time recalled from the real time clock module.

Format *<!> <UTILITIES>*
{command}
<PRINT>

Command & option

{command} GET-TIME

Printer output hh:mm:ss\ 0
hh = hours (00 – 23)
mm = minutes (00 – 59)
ss = seconds (00 – 59)
null terminator (00H)

M. SET-DATE Utility

The command sets the date in the real time clock module.

Format *<!> <UTILITIES>*
{command} {date-stamp}
<PRINT>

Command & option

{command} SET-DATE

{date-stamp} mm-dd-yyyy
mm = month (01 – 12)
dd = day (01 – 31)
yyyy = year (1990 – 2089)

N. GET-DATE Utility

This command reports the current date.

Format *<!> <UTILITIES>*
{command}
<PRINT>

Command & option

{command} GET-DATE

Printer output mm:dd:yyyy\ 0
mm = month (01 – 12)
dd = day (01 – 31)
yy = year (1990 – 2089)
null terminator (00H)

O. Printing a Time Stamp

To print a time stamp on a label, use any text command and insert " !< TIME" in the place of the text to be printed.

```
Input (TIME.LBL)

! 0 200 200 210 1
TEXT 4 0 0 100 !<TIME
FORM
PRINT
```

Output:

14:47:23

P. Printing a Date Stamp

To print a date stamp on a label, use any text command and insert "!<DATE" in place of the text to be printed.

!<DATE -> mm : dd : yy

```
Input (DATE.LBL)

! 0 200 200 210 1
TEXT 4 0 0 100 !<DATE
FORM
PRINT
```

Output:

02-24-1998

!<DATE-EU -> dd : mm : yy

```
Input (DATE-EU.LBL)
! 0 200 200 210 1
TEXT 4 0 0 100 !<DATE-EU
FORM
PRINT
```

Output:

24-02-1998

Q. PAPER-JAM Utility

This command establishes the parameters that allow the printer to report a paper jam.

Format	*<!> <UTILITIES>*
	{command} {method} {bar distance} {alert "message"}
	<PRINT>
Command & option	
{command}	PAPER-JAM
{method}	PRESENTATION
	BAR
	GAP
	This parameter establishes which sensor will be used to detect a paper jam.
{bar-distance}	Maximum distance within which index mark of next label is expected
{alert "message"}	ALERT "Paper jam detected" : The {alert} parameter is optional.
	Message which is informing that paper jam is detected

10. Printer Escape Commands

A. SET AND READ CODE Command

Printer command sessions normally start with the '!' character. When the printer is used in Generic Text Mode (or Line-Print Mode) and if the user expects to print the '!" character in that mode, then the CCL code must be changed.

Set CCL Code

ESC(0x1b) '}'(0x7d) 'W'(0x57) '1'(0x31) <new CCL code>

Where {new CCL code} is a one-bye character representing the new CCL code.

Once the CCL Code is changed, all CCL session should be stared with the new CCL code.

The printer will retain the new CCL code for as long as it remains powered.

Follow sequence to read the CCL code:

Read CCL Code

ESC(0x1b) '}'(0x7d) 'R'(0x52) '1'(0x31)

After the above command is issued, the printer will return the one-character CCL code.

PRINTER ESCAPE COMMANDS FORMAT

Format	*{escape} {command} [parameters]*
Command & option	
{escape}	The ESC characte (0x1b)
{command}	Choose from the escape commands in this section
[parameters]	Parameters for the escape commands

☞ NOTE: The escape commands should not be used while in a control/utility session ("! UTILITIES ... PRINT" or ! 0 ... PRINT")

B. STATUS / INFORMATION

1. Get Printer Status

   ESC (0x1b) 'f'(0x68)

   This command requests a status byte form the printer. It should be called before loading or printing a label in order to make sure that the host software is synchronized with the printer. A status byte from the printer is as follows

Bit0	Status(0: ready, 1: busy)
Bit1	Paper(0: present, 1: out of paper)
Bit2	Latch(0: closed, 1: open)
Bit3	Battery Level(0: OK, 1: Low)
Bit4 ~ 7	Reserved
Bit8 ~ 11	Contrast(0 ~ 3)
Bit12 ~ 15	Reserved

2. Get Printer Information

   ESC (0x1b) ‘s’(0x73)

   This command instruct the printer to return a null-terminated string containing its model number, firmware revision and serial number.

3. Get User Label Count

   ESC (0x1b) ‘L’(0x73) ‘R’(0x52) ‘U’(0x55) ‘C’(0x43)

   This command requests the current user label count from the printer. This count represents the total number of labels printed since the last time the count was reset to zero.

4. Reset User Label Count

   ESC (0x1b) ‘S’(0x53) ‘W’(0x57) ‘M’(0x4D) ‘L’(0x4C) ‘C’(0x43)

   This command instructs the printer to clear its user label count to zero.

C. POWER OFF Command

1. Off Command

   ESC (0x1b) ‘p’(0x70)

   This function instructs the printer power off.

2. Timeout Command

   GS (0x1D) ‘S’(0x53) ‘P’(0x50) mode(0x00 ~ 0x02) time(minute, 1 ~ 60)

   This function instructs the printer stand by or power off.

mode	
0	The Timeout function is not used.
1	It turns off the power after the designated time.
2	It is converted to the hold mode after the designated time..

The time to designate is (minute) unit. And it can designate to 1 ~ 60 minute.

11. Configuration/Control Commands

The following section covers a set of commands to configure and query printer parameters and perform various printer control functions. For example, this set of commands include querying printer's baud rate or setting the specified value of baud rate. This set of commands is referred to as the set/get/do command.

A. Command Format

3. setvar command

This command are used to configure printer operating parameters to specified values.

Format *setvar "{parameter name}"*

{parameter name}" Please refer to the parameter list below.

4. getvar command

The getvar command is used to get the current value of printer parameter.

Format *getvar "{parameter name}" "{value}"*

{parameter name}" Please refer to the parameter list below.

{value} The customized value

5. do command

The do command can be used to instruct the printer to the specified parameter

Format *Do "{parameter name}"*

{parameter name}" Please refer to the parameter list below.

6. Usage

This set/get/do command is used in combination with "U1" Command

Format *! U1 setvar "{parameter name}"*

! U1 getvar "{parameter name}" "{value}"

! U1 do "{parameter name}"

B. Commands/Parameters

parameter	command	value	description
Application Parameters			
appl.date	getvar		Printer's application date
appl.name	getvar		Printer's application name
appl.version	getvar		Printer's application version

Bluetooth Parameters			
bluetooth.address	getvar		Bluetooth device address
bluetooth.authentication	getvar		This parameter sets Bluetooth authentication mode and works in combination with the "bluetooth.bluetooth_pin" parameter. ▪ default "off"
	setvar	"off" "default" "setpin"	
bluetooth.bluetooth_pin	setvar	text string up to 10	This parameter is used to connect to the printer only when the "bluetooth.authentication" parameter is set to

		characters	"setpin". This parameter is not used when the "bluetooth.authentication" parameter is set to "default" or "off". See "bluetooth.authentication".
bluetooth.date	getvar		This parameter is the release date of the Bluetooth module.
bluetooth.discoverable	getvar		This parameter sets the Bluetooth discoverable mode ▪ default "on"
	setvar	"on" "off"	
bluetooth.friendly_name	getvar		This parameter sets the friendly_name, which is part of the local_name used during service discovery and also affects authentication. The friendly_name is a string of up to 20 characters long; it will default to the printer serial number if not set by the user.
	setvar	any srring of 20 characters or less	
bluetooth.local_name	getvar		This parameter is the local name that will be provided during service discovery. It is a combination of the printer model name and the friendly_name
bluetooth.version	getcar		This parameter is the Bluetooth library version number

Comm Port Parameters			
comm.parity	getvar		Printer's comm. parity ▪ default "n"
	setvar	"n" (none) "e" (even) "o" (odd)	
comm.baud	getvar		Printer's comm (cable) baud rate. ▪ default "19200"
	setvar	"9600" "19200" "38400" "57600" "115200"	
comm.stop_bits	getvar		Printer's comm. port stop bits ▪ default "1"
	setvar	"1" "2"	

Device Parameters			
device.friendly_name	getvar		This parameter refers to the device's friendly name. The printer will report its serial number as friendly name if a name has not been assigned to it yet.
	setvar	A string of Up to 16 characters	
device.reset	do		Instructs the printer to perform a soft reset.
device.languages	getvar		This parameter sets the programming language recognized by the printer.
device.restore_defaults	do		Instructs the printer to restore factory default values for the specified category of parameters.

File Parameters		
file.delete	do	This command can be used to delete printer files.
file.dir	getvar	This parameter refers to the printer file directory
file.print	do	This command can be used to print the contents of

			printer files.
file.rename	do		This command can be used to rename printer files.
file.run	do		This command can be used to execute a batch file or label file stored in the printer's file system.
file.type	do		This command can be used to retrieve contents of a file.

Printer Machanism Parameters			
head.latch	getvar		This parameter refers to the status of the printer head latch. The head latch must be closed for printing.
media.width_sense.enable	setvar	"on" "off"	This parameter turns the Media Width Sensing option "on" or "off". This parameter only applies to printers equipped with the Media Width Sensing option, other's will ignore this command. ▪ default "off"
media.width_sense.in_mm	getvar		This parameter returns the current media width installed in the printer measured in millimeters. The "media.width_sense.enable" parameter must be set to "on".
media.width_sense.in_cm	getvar		This parameter returns the current media width installed in the printer measured in centimeters. The "media.width_sense.enable" parameter must be set to "on".
media.width_sense.in_dots	getvar		This parameter returns the current media width installed in the printer measured in dots. The "media.width_sense.enable" parameter must be set to "on".
media.width_sense.in_inches	getvar		This parameter returns the current media width installed in the printer measured in inches. The "media.width_sense.enable" parameter must be set to "on".

Media Parameters			
media.sense_mode	getvar		This parameter refers to media sense mode. ▪ default "gap"
	setvar	"bar" "gap"	
media.status	getvar		This parameter refers to the paper status.
media.tof	getvar		This parameter refers to the print's top-of-form setting. The TOF setting is used to program the distance between the top-of-form and the end of the next (positive value) or previous (negative value) eye-sense mark or gap. The eye-sense-mark or gap that is closer to the top-of form should be used for top-of-form setting. Refer to the SETTOF command in Section 9 for more detailed information on the TOF setting. ▪ default "16"
	setvar	"0" ~ "255"	
media.type	getvar		This parameter refers to the media type that is being used.
	setvar	"label"	

		"journal"	▪ default "label"

Memory Parameters			
memory.flash_size	getvar		This parameter refers to the total amount of Flash memory.
memory.flash_free	getvar		This parameter refers to the amount of available Flash memory.
memory.ram_size	getvar		This parameter refers to the total amount of Random Access Memory.
memory.ram_free	getvar		This parameter refers to the amount of available RAM.

Odometer Parameters			
odometer.label_dot_length	getvar		Reports the length of the last label printed (or fed), in dots. The label dot-length is set to zero when the printer is turned on. This parameter is updated every time the printer feeds or prints a label and detects a marker, either gap or bar, while printing or feeding.
odometer.latch_open_count	getvar		This parameter refers to the number of times the printer's latch has been opened. The latch open count can be set to an initial value and incremented every time the latch is opened. Typically the latch is opened each time a roll of media is loaded. ▪ default "0"
	setvar	"0" ~ "65535"	
odometer.media_marker_count	getvar		This parameter refers to the media marker count. The media marker counter keeps track of how many labels have passed through the printer, (if they have been printed or not) by counting the bar sense marks on the back of the media.
odometer.user_label_count	getvar		This parameter refers to the user label count. The user label counter keeps track of how many labels have been printed.since the last re-set of the counter. The user's label count can be set to an initial value and ncremented every time a label is printed. ▪ default "0"
	setvar	"0" ~ "65535"	

Power Parameters			
power.Inactivity_timeout	getvar		This parameter refers to the inactivity timeout. ▪ A value of "0" disables inactivity timeout ▪ default "120"
	setvar	"0" ~ "65535"	
power.low_battery_timeout	getvar		This parameter refers to the low battery timeout. When

	setvar	"0" ~ "65535"	the printer reaches the low battery state this timeout will become active. The printer will shut down after the specified low battery time out ▪ A value of "0" disables inactivity timeout ▪ default "60"
power.low_battery_shutdown	getvar		This parameter refers to the low battery shutdown level.
power.low_battery_warning	getvar		This parameter refers to the low battery warning level.
power.PercentFull	getvar		This parameter refers to the battery status.
power.status	getvar		This parameter refers to the battery status.
power.voltage	getvar		This parameter refers to the battery voltage.

Test Function Parameters		
test.feed	do	This command can be used to advance media to top-of -form.
test.print_diags	do	This command can be used to print a diagnostics report.
test.report_diags	do	This command can be used to retrieve a diagnostics report from the printer.

USB Parameters		
usb.device.device_id_string	getvar	This parameter refers to the manufacturer assigned IEEE1284 Device Identification string used to describe a particular USB product.
usb.device.device_version	getvar	This parameter refers to the version of the USB device being queried.
usb.device.manufacturer_string	getvar	This parameter refers to the string containing the name of the manufacturer of the USB device.
usb.device.product_id	getvar	This parameter refers to the Product Identification number that a manufacturer has assigned to a particular product. This number, along with the Vendor ID, allows a USB host to distinguish one device from another.
usb.device.product_string	getvar	This parameter refers to the manufacturer assigned string describing a particular USB product.
usb.device.serial_string	getvar	This parameter refers to the manufacturer assigned serial number string describing a particular USB product. This string should be unique to a particular device.
usb.device.vendor_id	getvar	This parameter refers to the Vendor Identification number that the USB organization has assigned to a particular group. This number, along with the Product ID, allows a USB host to distinguish one device from another.

GAP-SENSE & BAR-SENSE Commands

These commands are used to instruct the printer as to which means of top-of-form detection should be employed. Printers default to GAP-SENSE if no command is specified.

Format	*{command}*
Command & option	
{command}	GAP-SENSE # (0-255)
	BAR-SENSE

Gap Sense commands can be followed by a number to adjust sensitivity

GAP-SENSE Command Example:

The following example configures the printer for barsensing. In addition, it specifies that the distance from top-of-form to the gap is zero.

```
! UTILITIES
BAR-SENSE
PRINT
```